

Notice of Allowability

Application No.

09/843,323

Examiner

M Rachuba

Applicant(s)

RADMAN, ALLAN M.

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment entered March 15, 2004.
2. ☒ The allowed claim(s) is/are 1-14 and 16-20.
3. ☒ The drawings filed on 25 April 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____



M Rachuba
Primary Examiner
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REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: the prior art of record does not disclose or fairly teach a polishing head in an apparatus for chemically-mechanically polishing semiconductor wafers, the polishing head comprising: (a) a first side having at least a portion thereof operably connectable with a spindle on the apparatus, a downward force being applied exclusively by a mechanical force applied by the spindle to the semiconductor wafer during planarization; and a second side opposite the first side, the second side having a substantially spherical cap shape comprising an outer region adapted to apply a first force onto a semiconductor wafer against a polishing pad, and an inner region adapted to apply a second force onto the semiconductor wafer against the polishing pad, the first force being greater than the second force, and wherein the first force and the second force cause the polishing pad to planarize the semiconductor wafer substantially uniformly wherein the shape of the spherical cap distributes the downward mechanical force applied by the spindle as the first and second forces applied by the outer and inner regions of the spherical cap. The closest prior art, to Pasch et al, teaches that it is known to make a carrier head of spherical form, but does not disclose or fairly teach that the head applies inner and outer forces to the wafer. Other spherical heads apply forces from other structure than the spindle.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning the content of this communication or earlier communications from the examiner should be directed to M. Rachuba whose telephone number is (703) 308-1361. The examiner can normally be reached on Monday through Friday from 8:30 AM to 4:00 PM. Any inquiries concerning other than the content of this and previous communications, such as missing references or filed papers not acknowledged, should be directed to the Customer Service Representative, Tech Center 3700, (703) 306-5648.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail, can be reached on (703) 308-2687.

In lieu of mailing, it is encouraged that all formal responses be faxed to 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1148.

M. RACHUBA
PRIMARY PATENT EXAMINER
ART UNIT 3723



mtr
March 31, 2004